Amendments to the Claims

This listing will replace all prior versions and listings of claims in this application:

Listing of Claims

Claim 1. (original) A method of operating a fuel cell including an anode, a cathode, a first passage, and a second passage, wherein the anode is disposed in the first passage and the cathode is disposed in the second passage, comprising:

(i) producing a non-explosive gaseous feed consisting of (i) at least one oxidizable component having a greater tendency to undergo oxidation relative to the anode, and (ii) a remainder, wherein the remainder is the predominant component in the gaseous feed and consists essentially of water vapor; and

(ii) introducing the non-explosive gaseous feed to the first passage to form a first gaseous stream flowing through the first passage when the anode realizes a temperature effective to facilitate deteriorative oxidation of the anode in the presence of an oxidizing agent.

Claim 2. (original) The method as claimed in claim 1, wherein the concentration of the water vapor in the gaseous feed is greater than 50% by volume based on the total volume of the gaseous feed.

Claim 3. (original) The method as claimed in claim 2, wherein the concentration of the at least one oxidizable component is less than the minimum concentration necessary to render the gaseous feed potentially explosive at the effective temperature.

Claim 4. (original) The method as claimed in claim 2, wherein the concentration of the at least one oxidizable component is less than the lower flammability limit of the at least one oxidizable component.

Claim 5. (original) The method as claimed in claim 2, wherein the concentration of the at least one oxidizable component is effective to mitigate deteriorative oxidation of the anode.

Claim 6. (original) The method as claimed in claim 5, wherein the concentration of the at least one oxidizable component is effective to substantially prevent deteriorative oxidation of the anode.

Claim 7. (original) The method as claimed in claim 6, wherein the at least one oxidizable component is selected from the group consisting of hydrogen, alcohols, aldehydes, ketones, esters, organic acids, ammonia, hydrazine, and hydrocarbons.

Claim 8. (original) The method as claimed in claim 7, further comprising evaporating an aqueous mixture consisting essentially of water and the at least one oxidizable component to produce the gaseous feed.

Claim 9. (original) The method as claimed in claim 8, wherein the anode comprises nickel.

Claim 10. (original) The method as claimed in claim 9, wherein the effective temperature

is 400 °C.

Claim 11. (original) The method as claimed in claim 10, further comprising flowing a second gaseous stream through the second passage, the second gaseous stream including oxygen, while contemporaneously flowing the first gaseous stream through the first passage.

Claim 12. (original) The method as claimed in claim 11, wherein the at least one oxidizable component is methanol and the concentration of methanol in the aqueous solution is less than about 2.4% by weight based on the total weight of the aqueous solution.

Claims 13-44. (canceled)

-- Claim 45. (new) The method as claimed in claim 1, wherein the anode is heated from temperatures lower than the effective temperature to the effective temperature.

Claim 46. (new) The method as claimed in claim 1, wherein, below the effective temperature, the anode does not realize deteriorative oxidation in the presence of an oxidizing agent.

Claim 47. (new) A method of operating a fuel cell including an anode, a cathode, a first passage, and a second passage, wherein the anode is disposed in the first passage and the cathode is disposed in the second passage, comprising:

producing a non-explosive gaseous feed consisting of (i) at least one oxidizable component having a greater tendency to undergo oxidation relative to the anode, and (ii) a remainder, wherein the remainder is the predominant component in the gaseous feed and consists essentially of water vapor;

introducing the non-explosive gaseous feed to the first passage to form a first gaseous stream flowing through the first passage when the anode realizes a temperature effective to facilitate deteriorative oxidation of the anode in the presence of an oxidizing agent; and

evaporating an aqueous mixture consisting essentially of water and the at least one oxidizable component to produce the gaseous feed.

Claim 48. (new) The method as claimed in claim 47, wherein the concentration of the water vapor in the gaseous feed is greater than 50% by volume based on the total volume of the gaseous feed.

Claim 49. (new) The method as claimed in claim 48, wherein the concentration of the at least one oxidizable component is less than the minimum concentration necessary to render the gaseous feed potentially explosive at the effective temperature.

Claim 50. (new) The method as claimed in claim 48, wherein the concentration of the at least one oxidizable component is less than the lower flammability limit of the at least one oxidizable component.

Claim 51. (new) The method as claimed in claim 48, wherein the concentration of the at least one oxidizable component is effective to mitigate deteriorative oxidation of the

anode.

Claim 52. (new) The method as claimed in claim 51, wherein the concentration of the at least one oxidizable component is effective to substantially prevent deteriorative oxidation of the anode.

Claim 53. (new) The method as claimed in claim 52, wherein the at least one oxidizable component is selected from the group consisting of hydrogen, alcohols, aldehydes, ketones, esters, organic acids, ammonia, hydrazine, and hydrocarbons.

Claim 54. (new) The method as claimed in claim 47, wherein the anode comprises nickel.

Claim 55. (new) The method as claimed in claim 54, wherein the effective temperature is 400 °C.

Claim 56. (new) The method as claimed in claim 55, further comprising flowing a second gaseous stream through the second passage, the second gaseous stream including oxygen, while contemporaneously flowing the first gaseous stream through the first passage.

Claim 57. (new) The method as claimed in claim 56, wherein the at least one oxidizable component is methanol and the concentration of methanol in the aqueous solution is less than about 2.4% by weight based on the total weight of the aqueous solution.

Claim 58. (new) The method as claimed in claim 47, wherein the anode is heated from temperatures lower than the effective temperature to the effective temperature.

Claim 59. (new) The method as claimed in claim 47, wherein, below the effective temperature, the anode does not realize deteriorative oxidation in the presence of an oxidizing agent.

Claim 60. (new) A method of operating a fuel cell including an anode, a cathode, a first passage, and a second passage, wherein the anode is disposed in the first passage and the cathode is disposed in the second passage, comprising:

producing a non-explosive gaseous feed consisting of (i) at least one oxidizable component having a greater tendency to undergo oxidation relative to the anode, and (ii) a remainder, wherein the remainder is the predominant component in the gaseous feed and consists essentially of water vapor;

introducing the non-explosive gaseous feed to the first passage to form a first gaseous stream flowing through the first passage when the anode realizes a temperature effective to facilitate deteriorative oxidation of the anode in the presence of an oxidizing agent; and

evaporating an aqueous mixture consisting essentially of water and the at least one oxidizable component to produce the gaseous feed;

wherein the at least one oxidizable component is selected from the group consisting of hydrogen, alcohols, aldehydes, ketones, esters, organic acids, ammonia, hydrazine, and hydrocarbons;

wherein the concentration of the at least one oxidizable component is effective to substantially prevent deteriorative oxidation of the anode;

wherein the concentration of the at least one oxidizable component is effective to mitigate deteriorative oxidation of the anode; and

wherein the concentration of the water vapor in the gaseous feed is greater than 50% by volume based on the total volume of the gaseous feed.

Claim 61. (new) The method as claimed in claim 60, wherein the anode comprises nickel.

Claim 62. (new) The method as claimed in claim 61, wherein the effective temperature is 400 °C.

Claim 63. (new) The method as claimed in claim 62, further comprising flowing a second gaseous stream through the second passage, the second gaseous stream including oxygen, while contemporaneously flowing the first gaseous stream through the first passage.

Claim 64. (new) The method as claimed in claim 63, wherein the at least one oxidizable component is methanol and the concentration of methanol in the aqueous solution is less than about 2.4% by weight based on the total weight of the aqueous solution. --